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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SAYOC, EMMANUEL

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/048,160

Applicant(s)

MACAULEY ET AL.

Examiner

Emmanuel Sayoc

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14, 20 and 27-30 is/are rejected.
- 7) ☐ Claim(s) 15-19, 21, 22-26, and 31-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show how the valve housing, diaphragm plate, diaphragm support plate, and the wobble plate as described in the specification are assembled with respect to each other. A blown up assembly drawing is recommended. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The specification is objected to because it does not adequately disclose the function of the pressure switch. The specification discloses that the switch shuts of the pump but does not specify what triggers this event. This information is needed in order to facilitate a proper search with respect to pump switches.

Claim Objections

4. Claim 14 is objected to because on line 10 the “region” is not specified as the “circular region” introduced in line 4. The examiner understands the regions are the same.

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5. In claim 14 the applicant is instructed to be consistent with respect to “valve seats.”

Refer to them either as “seat” or “seating.” The same goes for “boss seating.”

On line 3 “wen” is misspelled.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 14-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 14 recites the limitation "inlet valves" in line 12. There is insufficient antecedent basis for this limitation in the claim.

In Claim 14 line 3, the word “similarly” is ambiguous – similar to what?

In Claim 14 line 5, the phrase “mutually exclusive inlet and outlet chambers” is ambiguous. Does this mean that the inlet leads to one inlet chamber and the outlet leads to one outlet chamber? Does the applicant simply mean that the inlet chamber is separate from the outlet chamber, or perhaps that there is a plurality of inlet and outlet chambers and that each chamber (either inlet or outlet) is its own separate fluid void? The examiner suspects the ambiguity stems from the word “exclusive.”

Claim 14 recites the limitation "diaphragm" in line 15. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether the diaphragm plate is distinct from the diaphragm.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 14, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Stucker et al. (U.S. 5,791,882).

With respect to claim 14, Stucker in Figures 1-10 disclose a high efficiency diaphragm pump. The pump comprises a casing with a front cover (29) and a back cover (27), and a diaphragm plate (Figure 5) extending across the covers and being secured there between when the covers are fastened together. The diaphragm plate contains a plurality of circular regions and the front cover contains substantially axially aligned inlet (19) and outlet (21) ports, each leading to inlet (89) and outlet chambers (91) respectively. A valve housing (See Figure 2) is securable inside the front cover and is defined therein. A concave resilient outlet valve (93) and an outlet dished shaped valve seat (inherent but not shown in Figure 2) is housed within the valve housing. The outlet valve seat contains fluid passages (105, 85) there through. A plurality of inlet valve seats (See Figure 2) and inlet valves (87) equal in number to the number of circular regions each being similarly dished and having a corresponding concave resilient valve seated therein. Each inlet valve seat has fluid passages (83) there through. The outlet valve is in fluid communication with the outlet chamber and the inlet valve is in fluid communication with the inlet chamber. A wobble plate (49) is positioned in the back cover, and has a central boss (46,60) and a plurality of pistons (piston surfaces 64, Figure 5) equal in number to the number of circular regions on the

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diaphragm plate. The pistons and the circular regions are correspondingly secured together, and the wobble plate is subjected to nutating motion to cause reciprocating action by the circular regions to provide pumping action. The wobble plate seats and holds a bearing (36,45). The boss contains an inwardly-extending flange over the bearing (see Figure 2).

With respect to claim 20, the casing (27) is secured to an electric motor (13) with its drive shaft connected via an eccentric (47) to the bearing.

Allowable Subject Matter

11. Claims 15-19, 21, and 22-33 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to diaphragm pumps

U.S. Pat. 4,610,605 to Hartley.

E.P. Pat. 0,744,547 A2 to Schoenmeyr et al.

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Contact Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Sayoc whose telephone number is (703) 305-0054.

The examiner can normally be reached on M-F 8 A.M. - 6 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (703) 308-0102. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



Emmanuel Sayoc
Patent Examiner
Art Unit 3746

ECS
March 24, 2003



CHARLES G. FREAY
PRIMARY EXAMINER